1.0 PURPOSE AND NEED FOR ACTION

International Malting Company, LLC (IMC) is proposing the construction and operation of a barley malt manufacturing plant with a malt and salable malt by-product production capacity of 16 million bushels per year. Construction and operation of the proposed malting plant would occur in two phases. After construction of Phase I, the malting plant would have the capacity to produce 12 million bushels of malt and salable malt by-product per year. After construction of Phase II, the malting plant capacity would increase to a maximum of 16 million bushels of malt and salable malt by-product per year. IMC would commence Phase II operations within 3 years of the commencement of Phase I operations.

1.1 PROJECT LOCATION

The facility would be located approximately 2 miles North of Great Falls, Montana between Black Eagle Road and U.S. Highway 87. The legal description is the SE ¼ Section 30, Township 21 North, Range 4 East, Cascade County, Montana. The raw water supply system for the malt production process would be located in Sections 28-30 & 33, Township 21 North, Range 4 East, Cascade County, Montana. A map is included in Appendix A.

1.2 NEED FOR ACTION

IMC has applied to the Montana Department of Natural Resources and Conservation (DNRC) for an easement to install a pipeline under the Missouri River, a navigable water body of which the State of Montana claims ownership of the land below the low water mark. IMC is also pursuing the purchase of an easement and the lease a portion of a water right permit from the Montana Department of Fish Wildlife & Parks (FWP).

FWP has applied to DNRC to change the place of use and purpose of use of a portion of Beneficial Water Use Permit 41Q-55863-00, a non-consumptive water right from Giant Springs used in the Giant Springs State Fish Hatchery (Hatchery). The application requests a temporary lease of water to IMC providing for a non-consumptive use of water for a period of 10 years with the option of requesting an additional 10-year extension. The City of Great Falls (City) has applied to the DNRC to change a portion of Water Reservation 41K71890-00 requesting an additional point of diversion from Giant Springs. The requested change would allow for the consumptive use of water by IMC. In addition, the City application includes requested corrections and clarifications to the place of use and points of diversion of the Reserved Water Right.

The sale of an easement and issuance of Authorizations to Change a Water Right on the part of DNRC and the sale of an easement and the lease of a water right on the part of FWP are state actions requiring review in compliance with the Montana Environmental Policy Act (MEPA).

1.3 OBJECTIVES OF PROJECT

IMC needs a high quality, reliable source of water to successfully operate the malting plant. IMC requires a maximum flow rate of 1500 gpm with a maximum annual diversion of 2419 acre-feet. The diversion and use of water would remain approximately the same throughout the entire year. Of the water diverted the malting process would consume approximately 20 % while 80 % would be a non-consumptive use of water. The 80 % of water not consumptively used would be released into the City sewer system and ultimately be discharged into the Missouri River from the City's wastewater treatment plant.

1.4 SCOPE

This document analyzes the portions of the project dealing with the water supply for the malt processing. This includes the diversion of water from the source and the transmission of water to the malt production facility. Other issues have been already addressed in previously completed environmental reviews. This document will not be analyzing the operation and location of the malt production facility. However as the water is key to the ultimate success of the malt production facility, the beneficial impacts to agricultural income were also analyzed in order to provide balance and perspective in the document.

1.4.1 EXISTING RELEVANT DOCUMENTS

The project calls for the use of existing water rights and existing diversion structures. Environmental reviews pertaining to these uses already exist. Additionally, an environmental review has been completed as a part of the Air Quality Permitting process.

1.4.1.1 Water Supply Protection Project for Giant Springs Hatchery EA

FWP completed a project designed to protect the diversion structure from Giant Springs from contamination from the whirling disease parasite. The project included the reconstruction of the collection facility. The March 1997 EA for the project explored several alternatives and their projected effects on the human environment.

1.4.1.2 Air Quality Permit 3238-00 EA

The Montana Department of Environmental Quality issued Air Quality Permit 3238-00 to IMC on May 1, 2003. An environmental assessment was completed evaluating the proposed malt plant and its impacts on the human environment. This assessment was limited in scope to generally the malt production facility and immediate area and did not examine in detail the potential impacts associated with the water supply for the plant. This EA concluded that no significant impacts would result from the operation of the malt processing plant and all impacts would be minor in nature.

1.4.1.3 Water Reservation Applications Above Fort Peck Dam EIS

The water reservation owned by the City was granted by the Board of Natural Resources and Conservation on July 1, 1992 as a part of the Final Order for all reservations granted in the Missouri River Basin upstream of Fort Peck Dam. An EIS was completed evaluating several alternatives and the projected effects on the human environment.

1.4.2 ISSUES STUDIED IN DETAIL

DNRC and FWP through internal scoping and through consultation with other agencies and organizations have identified four issues that warrant detailed study. The issues (1.4.2.1 - 1.4.2.4) were studied in greater detail as they relate to the water supply system construction and operation**.**

1.4.2.1 Hatchery Operations / Production

The operation and fish production capability of Giant Springs State Fish Hatchery is dependent on the flow of water available to the hatchery. Diminishment of flow may limit fish production and change operations at the hatchery.

1.4.2.2 Water Rights & Water Quality

Central to the water right change applications submitted both by FWP and the City are the issues of water quantity and distribution. Both applications involve the same diversion from Giant Springs that is also shared with Source Giant Springs, Inc., a water bottling plant. The protection

of water quality is also of great importance as Source Giant Springs Inc, relies on a clean, protected water supply.

1.4.2.3 Water Supply System Installation & Location

The proposed water supply system would require the installation of a new pump system, excavation for a pipeline and drilling under the bed of the Missouri River. These activities would occur on the Hatchery grounds as well as on native lands that have been previously undisturbed. This installation would require short-term disturbances of various resources as well as permanent impacts to some resources.

1.4.2.4 Agricultural Economic Impacts

Secondary impacts to malt barely prices would be noticeable. Air Quality Permit 3238-00 EA did not adequately address the secondary beneficial impacts to the agricultural production and the associated impacts.

1.4.3 ISSUES ELIMINATED FROM FURTHER STUDY

1.4.3.1 Fishery

As the project is located in part in close proximity to the Missouri River, the impacts to the natural fishery were initially of concern. After further consultation with FWP fisheries biologists, it was determined because the impacts to the water quantity and quality of the river would be so small there would be no impacts to the fishery. For this reason the impacts to the fishery as an issue was eliminated from further study.

1.4.3.2 Clarification of City of Great Falls Reserved Water Right

The *Water Reservation Applications Above Fort Peck Dam EIS* has previously analyzed the impact of the additional use of water granted to the City in Water Reservation 41K71890-00. It was determined the granting of this and the other reserved water rights would have no significant impact. For this reason the additional use of water was not analyzed in this EA, only the potential impacts resulting from the requested change in manner received more study.

This EIS analyzed the impacts of the reserved water right as outlined in the reservation application submitted by the City. The application contained the conflicting information and as a result the Water Reservation contains some errors. In addition, the City may have been overly specific in terms of its future development. The corrections and clarifications requested do not represent impacts different than those already evaluated in the EIS.

1.5 DECISIONS TO BE MADE

The DNRC must decide on the issuance or denial of the applications to change a water right by both FWP and the City. The DNRC must also decide on the sale of an easement for the pipeline under the Missouri River. FWP must decide whether or not to lease a non-consumptive portion of their permit to IMC, whether or not to allow IMC to the use of FWP's existing diversion facilities, and whether or not to sell and easement for pumping and pipeline facilities to IMC. The decisions on the part of FWP will not be finalized until an addendum to this EA further evaluating IMC's compensation to FWP and FWP's plan to mitigate lost Hatchery production.

1.6 STATUTORY REGULATORY REQUIREMENTS

The decisions to be made by DNRC and FWP are governed by state and federal statute. Other agencies may have jurisdiction over certain aspects of the project.

1.6.1 STATUTES DIRECTLY RELATED TO DECISIONS.

The decision by the DNRC regarding the applications to change a water right by both FWP and the City of Great Falls are governed by the statutory criteria in section 85-2-402(2) MCA. These criteria are found in Appendix B. With regard to the temporary leasing of a water right by FWP to IMC the limitations of section 85-2-407, MCA must also be considered.

Pursuant to Sections 70-16-201, 70-1-202, 70-1-102, 70-18-203, MCA, the State of Montana owns the beds of navigable waterways in Montana from low-water mark to low-water mark. Section 77-2-101, MCA, authorizes the Montana State Board of Land Commissioners to issue an easement for a pipeline across state lands.

Because FWP received federal funding from US Fish & Wildlife Service for the Hatchery they are governed by federal statute regarding actions potentially impacting the Hatchery or operations of the Hatchery. The US Fish & Wildlife Service has been informed of the project and has supplied FWP with a letter indicating that they are not concerned with the proposed project. The FWP Commission must approve the decisions by FWP. This process allows for additional public comment. Because the neither the financial compensation package between IMC and FWP has not been completely negotiated and because the mitigation plans regarding the lost Hatchery production have not finalized, FWP will prepare an addendum to this EA in conjunction with the FWP Commission approval process to further address both of these issues and to allow for further public input. As outlined in section 1.5 no final action will be taken on the part of FWP until the addendum is completed.

1.6.2 OTHER REGULATORY STATUTES

The local, state and federal agencies listed in Table 1.3-1 may have jurisdictional authority over certain aspects of the water supply project. IMC has submitted a *Joint Application of Proposed Work in Montana's Streams, Wetlands, Floodplains and Other Water Bodies.* This joint application includes the permits listed in Table 1.3-1. If additional permitting is required, the agency with jurisdiction will conduct the proper review.

Table 1.6-1. Other agencies that may have jurisdiction and permitting authority.

Agency	Permit	Nature of Permit	Authority
U.S. Army Corps of Engineers	Section 404 Permit (Clean Water Act)	Controls discharge of dredged or fill materials in wetlands and other water of the U.S.	Section 404 of the Clean Water Act (33 CFR 323.1)
MT Dept. of Environmental Quality	Short-Term Water Quality Standard For Turbidity 318 Authorization	Requires a permit of any activity in any state water that will cause unavoidable short-term violations of water quality standards	Section 75-5-318, MCA
Cascade County Floodplain Program	Floodplain Permit	Requires a permit to build permanent structures or to place fill in a designated flood plain.	Sections 76-5-301 – 302, MCA Floodplain and Floodway Management
Cascade County Conservation District	310 Permit (Montana Natural Streambed and Land	Requires a permit to perform work in or near a stream.	Sections 75-7-101 - 124, MCA Natural Streambed and

	Preservation Act)		Land Preservation Act

2.0 PROPOSED ALTERNATIVES

2.1 INTRODUCTION

Beginning in 2002 IMC began exploring the possibility of locating a malt production facility in the Great Falls area. Water supply was an extremely important factor and was extensively explored by IMC.

2.2 PROCESS USED TO FORMULATE ALTERNATIVES

The alternatives were developed as a natural part of IMC exploring the possible water supplies for the malt production plant. Several state agencies worked with IMC to provide possible ideas for sources of water and to help them investigate the opportunities available to them.

2.3 ALTNERATIVE DEVELOPMENT CRITERIA

IMC requires reliable, high quality water for the malt production process. A maximum flow rate of 1500 gpm is needed. A total annual volume of 2419 acre-feet is needed. Approximately 20% of this volume must be available for consumptive use. The alternatives must also provide a conduit to move the water from the source to the IMC plant.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

IMC analyzed several possible water supplies as well as alternate means of delivering the water from the source to the IMC plant. IMC ultimately chose not to pursue these alternatives.

2.4.1 RAILROAD BRIDGE PIPELINE ROUTE

Through the development of alternatives it became apparent that the supply of water might well be located on the opposite side of the Missouri River from the IMC plant. IMC considered attaching the water supply pipeline to the Rainbow Dam Railroad Bridge located just upstream of Rainbow Dam. This would leave the pipeline exposed to vandalism. Also, it would require several miles of additional easements and pipeline creating additional economic and environmental impacts. For these reasons this alternative was not ultimately considered as a viable alternative warranting detailed study.

2.4.2 ALTERNATE WATER SUPPLIES

Because of the importance of the water supply to the project IMC considered several potential sources of water.

2.4.2.1 Madison Wells

IMC considered the construction of wells tapping the Madison Aquifer. This is the same aquifer that supplies high quality water to Giant Springs. The Madison Aquifer is a very prolific aquifer immediately south and east of Great Falls. A cluster of wells tapping the Madison Aquifer in this area would likely be able to produce the flow rate and volume needed for the malt production plant. However, in the area of the IMC plant on the north side of the Missouri River the Madison Aquifer is not likely capable of producing neither the quality nor quantity of water required. The wells would most likely need to be located south of the River. The well water would need to be piped across or under the River. Additionally, the pumping of the wells could negatively impact other water wells in the Madison Aquifer as well as the flow from Giant Springs. The legal

availability of the water could be in question. This coupled with the cost of the pipeline and the cost of constructing the wells were the reasons this alternative was not ultimately pursued.

2.4.2.2 Missouri River

IMC also considered diverting water directly from the Missouri River. This would require extensive treatment of the water prior to being used in the malt production process. Because of the economic costs associated with water treatment this alternative was not pursued.

2.4.3 NON-CONSUMPTIVE USE WATER RIGHT

Once IMC determined that Giant Springs would be the source of water it considered different options for obtaining the legal right to use the water. IMC could have applied to obtain a beneficial water use permit for the 80 % of the water not consumed by the malt production process. This would have required an additional diversion of 1500 gpm from Giant Springs. The pursuit of a non-consumptive water right on the part of IMC is not considered by IMC to be currently desirable.

2.4.4 CONSUMPTIVE USE - CHANGE OF EXISTING WATER RIGHTS

The upper Missouri River basin upstream of Morony Dam is generally closed to new appropriations of water by section 85-2-343, MCA. Morony Dam is located on the Missouri River approximately 10 miles downstream of Giant Springs. For this reason IMC would need to change the use of existing water right to supply the consumptive portion of the water diverted from Giant Springs. Ultimately, IMC determined the Water Reservation owned by the City of Great Falls presented the most reasonable source for the consumptive demand of the malt production plant. However, the possibility of changing the point of diversion, place of use and in some cases the purpose of other water rights was initially explored.

2.4.4.1 Industrial or Commercial Water Rights

IMC on its own volition as well as with the help of DNRC explored the possibility of purchasing existing industrial or commercial water rights and changing the purpose, point of diversion and place of use to allow for the use of the water rights at the IMC plant. Industrial or commercial water rights were sought as they typically have period of diversion encompassing the entire year. No suitable water rights with owners willing to sell them for reasonable compensation were found. For this reason this alternative was explored no further.

2.4.4.2 Irrigation Water Rights

IMC also considered the possibility of purchasing existing irrigation water rights to supply the consumptive use of water. While many irrigation rights have a consumptive use greater than or equal to that required by IMC they cannot be used throughout the entire year. The use of these rights is generally limited to the irrigation season. Using irrigation rights would require IMC to develop water storage facilities capable of storing up to 50% or more of the water needed for consumptive use. For this reason the purchase and use of irrigation water rights was determined to be unfeasible.

2.5 PROPOSED ALTERNATIVES

After consideration of various sources of water and means or moving the water to the IMC plant the following alternatives were studied in greater detail.

2.5.1 NO ACTION ALTERNATIVE

This No Action Alternative contemplates the IMC malt production plant not being constructed and no need for a water supply nor the associated easements and licenses.

2.5.2 EXISTING DIVERSION ALTERNATIVE

The Existing Diversion Alternative studies the impacts of using the existing FWP diversion to supply IMC. The consumptive water needs would be supplied by changing a portion of the City's Water Reservation while the non-consumptive needs would be supplied by changing a portion of FWP's hatchery water right. The current intention is to have FWP supply the 1200 gpm and 1936 ac-ft non-consumptive demand with the City supplying the 300 gpm 483 ac-ft consumptive demand. However, in the future if the existing diversion structure proves adequate to supply FWP's 16,325 gpm existing water rights as well as the 1500 gpm industrial demand, the FWP temporary change would not need to be extended and the City could supply the entire industrial demand.

Water would be transported to the malt production plant through a pump and pipeline system. The pump would be located in the existing Hatchery pump building . The primary water supply for the Hatchery raceway includes 5 pumps. One of these pumps would be removed to accommodate the IMC pump. A second of the 5 pumps would be replace with a pump capable of producing twice the flow rate allowing the Hatchery to divert at the same rate if conditions and permits allow. From the IMC pump the supply line would exit the pump building in the same location as the existing Hatchery pipeline and would then parallel the pump building just above the existing Hatchery main supply manifold. The pipeline would be a 12-inch stainless steel pipe. At the northwest corner of the Hatchery pump building the IMC supply line would turn downward and be buried from that point to its connection with the remainder of the pipeline. From this corner of the Hatchery pump building the pipeline would all be below the ground surface the entire distance to the IMC plant.

A new power supply line would be buried from existing power lines to the Hatchery pump building to supply both the existing and additional electricity demand. This power line would be buried in the same trench as the pipeline. Appendix C contains a general schematic of this portion of the project and Appendix D contains a picture of the general area looking northwest toward the Hatchery and across the Missouri River.

A 12-inch pipeline would be inserted under the Missouri River into a drill hole constructed by directional drilling. The drill hole would be cased with 16 in. high-density polyethylene pipe with the 12 in. pipe then being inserted in the 16 in. casing. The drilling would occur from the south to north with the drilling equipment being positioned on Hatchery grounds. The drill hole would be constructed at an approximate depth of 15 ft. below the riverbed and have an approximate overall length of 900 ft. No excavation of the riverbed would occur. The directional boring would end just beyond Rainbow Dam Road approximately 50 ft. from the north bank of the river. The drilling would generate slurry composed of cuttings and water. The slurry would be removed from the drill hole at the point of entry on the Hatchery grounds and removed from the project site for proper disposal.

From the end of the directional drilling on the north side of Rainbow Dam Road the 12-in. pipeline would be buried in a 7.5 ft. deep by 3.5 ft. wide trench. The trench would be constructed using a standard tracked excavator. Granular material would be placed in the bottom of the trench to protect the pipeline from sharp objects and the pipeline would be covered and compacted in several lifts using native soils. Silt fences and other similar measures would be used to limit erosion. The areas disturbed north of the river would be restored using a blend of

native grass seed matching the existing vegetation. The areas disturbed on the Hatchery grounds south of the river would be restored using fresh-cut sod.

Construction of the water supply system would be scheduled to begin in May 2004 and finishing by the end of July 2004. The construction in and round the Hatchery would be completed first with the construction north of the river occurring into the summer.

2.5.3 NEW DIVERSION ALTERNATIVE

The New Diversion Alternative explores the construction of a separate diversion from Giant Spring to supply IMC. A diversion structure similar in nature to the existing diversion would be constructed to supply the 1500 gpm and 2419 ac-ft. industrial demand. The diversion would likely be located immediately east of the existing diversion in the main spring. A gravity supply line would be buried from the new diversion to the pump station described in the Existing Diversion Alternative. This supply line would require additional excavation and restoration of Hatchery grounds from the new diversion to the area near the Hatchery wet well, a distance of approximately 300 ft. The other aspects including the general construction schedule would likely be the same as those for the Existing Diversion Alternative.

2.6 CUMULATIVE EFFECTS

2.6.1 PAST ACTIONS

Development of Giant Springs as a water source include water rights totaling 16,825 gpm up to 26559.3 acre-feet annual use. This usage is over 95% non-consumptive use with the water returned to the Missouri River. In terms of the discharge of the main spring of approximately 200 cfs or about 90,000 gpm, this diversion represents about 20% of the main spring discharge. Given the almost immediate discharge from the main spring to the Missouri River with the remainder flowing down the Roe River a distance of about 200 feet, this 20% reduction in flow is not likely visually noticeable. Almost half of this diversion has been occurring for over 80 years dating back to the time of the hatchery was established in the early 1920s.

2.6.2 PRESENT ACTIONS

The pending project currently calls for no increase in diversion while 300 gpm of the diversion previously non-consumptively used would now become a consumptive use. No other current proposed projects call for development or use of Giant Springs. When considered with past actions, the proposed project would have little or no additional impact to Giant Springs and the surrounding resources.

2.6.3 FORESEEABLE FUTURE STATE ACTIONS

Some concern exists that the pending project would set a precedent for future use and development of Giant Springs water. At this time there are no other pending applications or requests before the State of Montana for any such use. As FWP owns the property in and around Giant Springs and the diversion structure, any future development would ultimately need to be approved by FWP. Such action would require further analysis to evaluate environmental impacts and to determine if such action would be in the State's best interest. At this time FWP has no plans to expand Hatchery water use.

With regard to water development in the upper Missouri River basin, new consumptive industrial uses are not permitted under the temporary basin closure. Any future consumptive water use development would require the change or reallocation of an existing water right.

2.7 SUMMARY OF IMPACTS

Table 2.7-1 compares of impacts to the affected resources for each of three alternatives.

Table 2.7-1

RESOURCE	Terrestrial and Aquatic Life and Habitats	Water Quantity, Quality and Distribution	Geology and Soil Quality, Stability, and Moisture	Vegetation Cover, Quantity & Quality	Aesthetics	Air Quality
NO ACTION	none	none	none	none	none	none
Existing Diversion	minor adverse	minor adverse	minor adverse	minor adverse	minor adverse	minor adverse
New Diversion	moderate adverse	moderate adverse	moderate adverse	minor adverse *	moderate adverse	minor adverse *
RESOURCE	**Historical & Archeological Sites**	**Local and State Tax Base and Tax Revenue**	**Agricultural or Industrial Production**	**Access to and Quality of Recreational Activities**	**Quantity and Distribution of Employment**	**Demands for Government Services**
NO ACTION	none	none	none	none	none	none
Existing Diversion	minor adverse	minor beneficial	moderate beneficial	minor adverse	minor beneficial	moderate beneficial
New Diversion	minor adverse *	minor * beneficial	moderate beneficial	moderate adverse	minor * beneficial	moderate beneficial

* The impact is generally classified the same as that associated with the Existing Diversion Alternative, however the impact is somewhat greater in magnitude.

2.8 PREFERRED ALTERNATIVE

The Existing Diversion Alternative is the preferred alternative. The No Action Alternative does not meet the objectives of the project while both Existing Diversion Alternative and the New Diversion Alternative meet these objectives. The Existing Diversion Alternative would have lesser impacts to the resources when compared to the New Diversion Alternative. The Existing Diversion Alternative minimizes impacts while meeting the project objectives and therefore is the preferred alternative.

2.9 MITIGATION / STIPULATION MEASURES

No specific mitigation or stipulation measures have been identified. Through the water right change application process mitigation or stipulation measures may be developed to ensure compliance with section 85-2-402(2) MCA.

2.10 REGULATORY EFFECTS ON PRIVATE PROPERTY

Both of the water rights involved are owned by public entities. The State of Montana owns the riverbed as well as the Hatchery and Giant Springs State Park. None of the alternatives call for changes in how DNRC or FWP regulate private property. Any mitigation or stipulation measures potentially developed as a part of the water right change application process would be necessary for compliance with section 85-2-402(2) MCA.

2.11 NEED FOR AN EIS

The most substantial and noticeable impacts are short-term, being limited to the duration of the construction and restoration phases of the water supply system project. The long-term impacts are generally less substantial and less noticeable. The expected impacts to each resource were compared to the criteria used to determine the significance of impacts found in DNRC Admin. Rule 36.2.524 and FWP Admin. Rule 12.2.431. None of the expected impacts are significant as defined with respect to these criteria. Therefore an EIS is not necessary.

3.0 AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

Several resources were identified as being affected by the water supply system project. The existing state of each of the affected resources is described and then the environmental consequences or impacts on the affected resource due to each alternative are described. As stated in section 1.4, only the impacts associated with the water supply system are addressed with the exception of the impacts associated with increased agricultural income associated with the malt production facility. These beneficial impacts were not adequately evaluated in previous environmental documents.

3.2 PREDICTED ATTAINMENT OF OBJECTIVES

The No Action Alternative would not meet the objectives of the applications. Both the Existing Diversion and the New Diversion Alternatives would meet the objectives of the applications although the New Diversion Alternative would require slight modifications of the water right applications and the submission of additional information regarding the design of a new diversion.

3.3 PREDICTED IMPACTS TO AFFECTED RESOURCES

3.3.1 TERRESTRIAL AND AQUATIC LIFE AND HABITATS

The water supply project area consists of agricultural farmland, native rangeland, and a very limited riparian area supporting wildlife consistent with that found throughout eastern Montana. The Missouri River in the project area is home to various forms of aquatic life including introduced trout species. Review of information from the Montana Fisheries Information System indicates that the reach has a substantial fisheries resources value. The River is highly influenced by the existence and operation of hydroelectric dams. USGS monthly stream flow statistics for the gauge site located just downstream of Morony Dam below the project area indicates mean monthly streamflows ranging from a high of 14,130 cfs in June to a low of 5588 cfs in August.

According to the Water Supply Protection Project for Giant Springs Hatchery EA , the Hatchery provides approximately 25 % of the total trout and salmon planted in the state. This production is dependent on having a sustainable flow of water. As the fish grow in the hatchery they require more water. In order to maximize hatchery production the full 16,000 gpm must be available at certain times of the year. Flows also must be consistently supplied to the Hatchery in order to preserve the fish in the Hatchery.

3.3.1.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.1.2 Existing Diversion Alternative

According to FWP's water right change application, the 1500 gpm reduction in flow to the Hatchery would reduce maximum fish production capability from 54,000 pounds per year to 43,500 pounds, about a 19% reduction. FWP has plans to mitigate this impact by adjusting Hatchery operations by increasing late summer and fall production, growing smaller fish for April and May plants and stocking additional fish from June through November. In addition to changes in Hatchery operations, the revenue generated from the lease of the water right would be used to increase production at other FWP hatcheries, compensate Federal hatcheries for additional fish, and improving natural spawning areas, thus reducing the need for stock fish and to better monitor stocked fish to derive more effective stocking strategies. IMC also plans to coordinate with FWP Hatchery staff to minimize the potential for impact to Hatchery operations during the construction phase and in future operations of the water supply system.

Wildlife would be displaced during the construction of the pipeline. The relatively rugged topography of the area just north of the River would provide cover for displaced wildlife. The displacement would be generally temporary, although some animals such as burrowing rodents and others with habitat closely associated with the soil may be permanently displaced. The 1500 gpm (3.34 cfs) that would be redistributed (further described in section 3.3.3.2) as a part of the water right change applications amounts to less than 1/10,000th of the lowest mean monthly flow for the Missouri River. This modification of stream flow would not be physically noticeable or measurable and would have no impact on the aquatic habitat in the Missouri River.

Given the limited duration and level of effect, the Existing Diversion Alternative would have a minor impact on Terrestrial and Aquatic Life or Habitats.

3.3.1.3 New Diversion Alternative

The New Diversion Alternative would have the same impacts to terrestrial and aquatic life and habitats as the Existing Diversion Alternative. In addition the aquatic life and habitat in the area of the main spring would be greatly disrupted during the excavation and construction of the new diversion. Animal life would be displaced and plant life would be destroyed during the project.

The New Diversion Alternative would not reduce Hatchery production at all if IMC applied for and obtained its own non-consumptive water right. Considering the water right applications currently pending, the Hatchery flow would need to be reduced by 1200 gpm to offset the 1200 gpm portion of the non-consumptive water right being leased to IMC that would be diverted at the new diversion. Hatchery production would be diminished, but not to the level associated with the Existing Diversion Alternative. The same mitigation measures would likely be taken on the part of FWP to mitigate the impact.

Given the additional impacts to the spring associated with the New Diversion Alternative, the impacts to Terrestrial and Aquatic Life or Habitats would be moderate.

3.3.2 WATER QUANTITY, QUALITY AND DISTRIBUTION

One diversion facility currently exists at Giant Springs. This diversion facility is used to supply up to 16,325 gpm to FWP and up to 270 gpm to Source Giant Springs, Inc. a producer of bottled water. FWP diverts up to 16000 gpm up to 25,804 acre-feet per year for use in the Giant Springs State Fish Hatchery. FWP diverts an additional 325 gpm up to 57.5 acre-feet for irrigation of the grounds at the hatchery and Giant Springs State Park.

Source Giant Springs, Inc. has water rights for a total of 500 gpm up to 697.8 acre-feet per year for commercial use. However, a contract between FWP and Source Giant Springs, Inc. limits the

diversion rate to 270 gpm, which in turn would effectively limit Source Giant Springs, Inc. annual volume to 435.5 acre-feet. This is the maximum annual volume that can be diverted at a continuous flow rate of 270 gpm.

The diversion structure consists of two 24 in. collection conduits installed over fissures in the bottom of the main spring. Water is collected in vault where it is then diverted into two pipelines. One 8 in. pipeline supplies Source Giant Springs, Inc. This pipeline reportedly reduces to a 6 in. diameter. A 42 in. pipeline supplies the hatchery and FWP's irrigation uses. It reduces to a 36 in. diameter. Control gates or valves control the flow into each of the pipelines. The pipeline serving Source Giant Springs, Inc. gravity feeds a pumping station located on Hatchery grounds that pumps water to the Source Giant Spring, Inc. facility located approximately 1 mile to the south of Giant Springs. The pipeline serving FWP gravity feeds a wet well containing 5 pumps. These pumps serve the Hatchery. Excess water flows to a separate pumping station that supplies the irrigation needs of the Hatchery grounds and Giant Springs State Park.

The diversion structure was designed to operate with a water level that matches the overflow weir troughs, such that the system is constantly pressurized. Excess water not entering the pipelines returns to the spring. The midpoint of the 42-inch line is located 39 inches from the bottom of the overflow structure. The midpoint of the 8-inch line is located 29 inches from the bottom of the structure. The overflow troughs are located 68 inches from the bottom of the structure.

The diversion structure was installed in 1999 and has been functioning since that time. It was designed to provide protection from *Mxyobolus cerebralis*, the parasite that causes whirling disease. Whirling disease in the hatchery would be detrimental to hatchery operations. In addition, the diversions structure provides source water protection for Source Giant Springs, Inc. water bottling operation. Giant Springs produces high quality water that is essential to both the Hatchery and Source Giant Springs, Inc.

Giant Springs is located downstream of Black Eagle Dam and upstream of Rainbow Dam, both hydropower dams owned by PPL Montana. The City's municipal intake for the Water Reservation is located upstream of Black Eagle Dam. The City's wastewater treatment plant is also located upstream of Black Eagle Dam.

The effluent released from the wastewater treatment plant complies with NPDES and MPDES permits. The discharge from the Hatchery receives minimal treatment. Water from the raceways moves through a settling basin for removal of suspended solids prior to being released to the Missouri River. FWP monitors the level of total suspended solids (TSS) in the water released to the Missouri River. This monitoring does not measure the level of nutrients in the Hatchery discharge, which is relatively high due to both fish food and fish excrement in the discharge.

3.3.2.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.2.2 Existing Diversion Alternative

Because the existing diversion structure would be used, no disturbance of the diversion structure or Giant Springs would occur. The valve on the Hatchery supply line could be closed if necessary to isolate the pump building wet well from the diversion structure during pump removal and installation of the new pumps. If this valve is closed the additional flow would simply exit the collection vault back into the spring. The pipeline route does not cross the pipeline of Source Giant Springs, Inc. Therefore it is highly unlikely that the excavation or

construction would potentially damage the Source Giant Springs, Inc. pipeline. The project will not likely affect the supply of water to Source Giant Springs, Inc.

Because the diversion structure is isolated from the pump building wet well and because operation of diversion would remain unchanged over the long term, the water quality from the diversion would not be impacted during construction or during future operations.

If the 1500 and 2419 ac.-ft. industrial portion of the Water Reservation being changed to Giant Springs were developed at the existing City of Great Falls diversion, the water diverted would not necessarily flow through Black Eagle Dam. Some portion may return as effluent from the wastewater treatment plant and ultimately flow through Black Eagle Dam. With this portion developed at Giant Springs and equal amount of water would remain in the Missouri River and be available for hydropower generation at Black Eagle Dam. The 1200 gpm and 1936 acre-feet portion of FWP's Hatchery water right being changed would now be discharged to the Missouri River from the City's wastewater treatment plant. This would increase the flow available at Black Eagle Dam over present conditions. As outlined in section 2.5.2 the total diversion would be 1500 gpm and 2419 ac-ft per year. If after further testing the diversion structure proves adequate to supply the FWP water rights in addition to the 1500 gpm industrial demand, FWP would not need to renew the temporary change of water rights and the City could supply the entire industrial demand.

The increased discharge from the City's wastewater treatment plant due to the malt plant effluent would be offset by a decreased discharge from the Hatchery. The quality of water released from the wastewater treatment plant is generally better than that released from the Hatchery and is more rigorously monitored as a part of the City's existing discharge permits. While the wastewater from IMC once treated may contribute to the nutrient load in the City's treatment plant discharge, this load is expected to be considerably less than that of the Hatchery for the same volume of water. Further review of TSS measurements at the Hatchery show that at times the Hatchery TSS concentration clearly exceeds the concentrations of the City's discharge under its MPDES permit. Water quality would not be diminished by this change in effluent discharges.

Considering the limited duration and limited severity, the Existing Diversion Alternative would have a minor impact on water quantity, quality and distribution.

3.3.2.3 New Diversion Alternative

In addition to the impacts associated with the Existing Diversion Alternative, the New Diversion Alternative would require that the main spring area water level be lowered by unstacking the rocks surrounding the pool. The spring would be excavated to install the diversion structure. During this construction phase diversion the water supply would be limited or completely cutoff to both the Hatchery and Source Giant Springs Inc. Even if the levels in the spring were sufficient to supply the existing diversion, the water quality would likely be impaired to the level that diversion would not be feasible.

The impacts to quantity and distribution of water in the Missouri River would be the same as the impacts using the Existing Diversion Alternative. Overall the impacts associated with the New Diversion Alternative would be moderate when considering the impacts associated with the construction in relation to the duration of these impacts.

3.3.3 GEOLOGY AND SOIL QUALITY, STABILITY, AND MOISTURE

The general geology of the area consists of the Kootenai Formation exposed at the surface underlain by the Morrison Formation, the Ellis Group and the Madison Group with the Madison Group being the oldest and hence the deepest. The Mission Canyon formation of the Madison Group is a prolific aquifer in the area and supplies the Giant Springs complex. Water in the Madison Group is under pressure and rises to the surface at Giant Springs through fractures in the overlying formations. The Sweetgrass Arch, a geologic anticline running from the Great Falls area to the Sweet Grass Hills, is responsible for the thinning and fracturing of the formations overlying the Madison Group resulting in the Giant Springs Complex. The Missouri River flows on top of a shallow bed of alluvial deposits over the rock of the Kootenai Formation.

The soil in the area varies in nature. The soils in the area of the Hatchery are classified as Lothair Silty Clay Loam. However, the area has undergone extensive disturbance over time and natural soil horizons are likely missing in many areas due to previous excavations. An area between the Hatchery wet well and pumping station and the proposed IMC pumping station is known to have hydrocarbon contamination. A remediation plan exists to remove and replace the contaminated soil in the area. This remediation plan is already in progress and calls for the removal of two existing garage structures. These structures are shown on the schematic in Appendix C. The removal of the garage structures allows for the placement of the pipeline from the Hatchery wet well to the IMC pump station as shown in Appendix C.

Soils along the pipeline route from the north bank of the Missouri River to the malt plant consist of Lisam-rock outcrop complex, Pendroy Clay, Marias Silty Clay and Ethridge-Kobar Silty Clay Loams. Review of the characteristics of these soil types indicate that in general they are moderately susceptible to wind and water erosion. Approximately the first ½ mile of the pipeline route north of the river consists of bedrock at or near the surface.

3.3.3.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.3.2 Existing Diversion Alternative

Soils would be excavated from the Hatchery pump station to the connection with the pipeline installed under the river. The fill would be properly compacted to prevent future settling and topsoil would cover the excavated areas. The pipeline through the area of contaminated soil would be installed when excavation occurs as called for in the ongoing remediation plan. The pipeline would be stainless steel to prevent possible decay and contamination caused by any remaining hydrocarbons.

The pipeline would be installed under the Missouri River using directional boring. The pipeline would be place at a depth of approximately 15 feet below the bottom of the river. Directional drilling under the Missouri River and other rivers to install pipelines, typically for crude oil or refined petroleum products, is common practice and relatively routine under typical operating conditions. Difficult operating conditions can fracture rock around a drill hole and cause fluid losses. However, there are safeguards and warnings during drilling that alert the driller of problem conditions and provide remedies to problems that arise.

Drilling fluid is an integral part of the drilling process and provides both safeguards and the ability to monitor the progress of drilling. For the IMC project, a slurry of water and bentonite clay will be circulated through drill pipe and back to the surface during drilling to drive the drill bit and remove drill cuttings. In addition to increasing viscosity to facilitate removal of drill cuttings, bentonite added to the slurry seals pores or fractures around the borehole to limit loss of mud to the formation. Fluid pressure during normal operation is expected to be less than 200 psi.

Plugging of the hole with cuttings can cause pressure to rise and abnormally high fluid pressure can increase fluid loss and fracture rock around the borehole. However, during normal procedures, and to prevent problems, the driller continually monitors fluid pressure and return fluid volume and adjusts operation to prevent abnormal pressures. If unforeseen problems arise, the driller has can respond by adding materials to mud to stop water loss or increasing mud viscosity to better clean the borehole of cuttings. If damage does occur, grout can be pumped to heal fractures. Also of concern, the borehole could interconnect fractures along its length and potentially affect the pattern of spring discharge. Again, fractures will tend to be sealed by bentonite during drilling, preventing flow between fractures along the borehole. Also, the water/bentonite/cuttings slurry will remain around the casing and prevent water flow along the borehole.

Finally, there is no evidence that a problem such as a "worst case" collapse of sandstone at Giant Springs or initiation of a large spring is likely to happen. There is no evidence that Giant Springs is that fragile a system. Water is conveyed from the Madison Formation at a depth of approximately 400 feet through fractures in overlying rock. Solution openings are occasionally described in driller's logs of wells in the area of Giant Springs but there is no evidence that huge underground caverns exist or are developing. Extensive caverns are plentiful in the Little Belt Mountains, the recharge area for the Madison Formation, however they are expected to be less prevalent with distance from the mountains as ground water becomes saturated with minerals present in limestone. In addition, younger formations probably have filled caverns that existed when the buried portion of the Madison Formation was at the surface.

To summarize, directional drilling should be relatively routine unless unforeseen conditions are encountered. To warn and safeguard against unforeseen conditions, the directional driller will monitor fluid pressures and return flow volume. In response to changing conditions the driller can modify the drilling process to prevent formation fracturing or water loss. Under the worst conditions that are reasonably expected, the driller has tools to repair any damage.

The pipeline from the north bank of the river to the IMC plant would be buried at a depth of 6.5 feet. The excavation in the first ½ mile may require on-site route modifications to avoid areas of consolidated bedrock. The fill would be compacted to prevent future settling. Best management practices to prevent both wind and water erosion would be used to stabilize the pipeline route until such time vegetation is re-established.

The short-term impacts due to the installation of the pipeline would be substantial in the area of construction while the long-term impacts would be relatively minor. The overall impacts to geology and soil quality, stability, and moisture would be minor given the extent and duration of the impacts.

3.3.3.3 New Diversion Alternative

In addition to the impacts associated with the Existing Diversion Alternative, the New Diversion Alternative would require an additional excavation between the Hatchery wet well and the spring. Also, it would require excavation of the main spring itself. Considering these additional impacts, the overall impact to geology and soil quality, stability, and moisture would also be moderate given the extent and duration of the impacts. However, these impacts would be more extensive than only those associated with the Existing Diversion Alternative.

3.3.4 VEGETATION COVER, QUANTITY AND QUALITY

Vegetation on the hatchery grounds generally consists of irrigated turf, various species of ornamental shrubs and both conifers and deciduous trees. Little if any riparian vegetation exists along the Missouri River as the hatchery grounds extend to the rivers edge on the south bank and the north bank consists of rock outcrops very closely bounded by the Rainbow Dam Road.

Vegetation from the Rainbow Dam Road to the IMC plant location consists of native plant species, introduced species and crops. From the Rainbow Dam Road on the north bank of the river to the top of the ridge to the north vegetation consists of native species including Western Wheatgrass, Wild Rose, Great Plains yucca and introduced species including Smooth Brome and Houndstongue. The density of vegetation is somewhat sparse, particularly on the ridges where soils are thinner. The vegetation is likely representative of natural conditions as it appears that no agricultural grazing of the area occurs. On the flat north of the river the vegetation changes to small grain crops as well as both introduced and native grasses that have been seeded on previously cultivated ground, possibly as part of the Conservation Reserve Program. Review of available documentation indicates that Leafy Spurge, Spotted Knapweed, Canadian Thistle, Hoary Cress (Whitetop) and Dalmation Toadflax have been identified as noxious weeds in the project area.

3.3.4.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.4.2 Existing Diversion Alternative

The installation of the pipelines as well as the directional boring would require disturbance of turf on the Hatchery grounds. The disturbance associated with the directional boring and excavation would be short-term and the turf would be replaced.

The excavation required for the pipeline from the exit of the directional boring on the north of the river to the IMC plant would remove the existing vegetation. Once the pipeline was buried, the disturbed areas would be re-vegetated using native species of grasses in the previously undisturbed areas and in the areas previously cultivated and now seeded to grass, like species of grass would be seeded. IMC would request that contractors clean any equipment that has previously been in areas invested with noxious weeds. Additionally no soil or material would be imported from sites where noxious weeds are known to exists. IMC intends to contract with Cascade County Weed and Mosquito Management would monitor pipeline route and control noxious weeds in accordance with state statute.

Given the short-term duration of many of the impacts and the small area that would be permanently affected, the impact to vegetation cover, quantity and quality would be minor.

3.3.4.3 New Diversion Alternative

In addition to the impact found in 3.3.4.2, the construction of the new diversion would require excavation of turf in the area around Giant Springs. The turf would be replaced at the completion of construction. This additional short-term impact to vegetation cover, quantity and quality in addition to the other impacts outlined previously would be minor.

3.3.5 AESTHETICS

The area surrounding the Hatchery and Giant Springs State Park is generally considered aesthetically pleasing. The area around Giant Springs is particularly beautiful and is usually

viewed by visitors to both the park and Hatchery. The area is relatively quiet and serine, although there is some noise associated with Hatchery operations and associated traffic. While the area contains many buildings, they are appropriate for the setting. The Hatchery area includes several homes occupied by hatchery workers. The Hatchery and park grounds are well manicured and are pleasing to the eye. Some less aesthetically pleasing features such as electrical transformers do exist. The area from the north bank of the Missouri to the top of the ridge paralleling the river is generally undisturbed native land, although a single-family residence is located on the north bank of the river approximately 0.2 miles upstream of the proposed pipeline location.

The Lewis and Clark Interpretive Center is located less than 1/2 mile upstream of the Giant Springs area on the south side of the river. The view from this location includes both the Missouri River Channel and hills rising above the river. In large part, the view does not contain man-made structures or features. FWP owns a conservation easement on the land north of the river owned by PPL Montana. The map in Appendix A shows the boundaries of this easement. The conservation easement is an open space easement requiring that the native features of the land be maintained and that no structures be place on the land.

3.3.5.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.5.2 Existing Diversion Alternative

The construction and excavation on the Hatchery grounds would be limited to the eastern part of the hatchery, not typically visited by the public. It would not be highly visible from the Giant Springs. Hatchery housing is located in the area and some noise would be associated with the construction. This noise level would be similar to other construction projects that have occurred in the area.

The pipeline route would generally not be visible from the hatchery and in particular from Giant Springs due to the topography of the area. The view of the pipeline route from the north bank of the river to the top of hills or ridge would be concealed by its placement in a ravine. Once on top of the hills or ridge north of the river, the elevation would conceal the route from the Giant Springs area. The pipeline route would not likely be directly visible from the Lewis and Clark Interpretive Center. No structures would be placed on the surface in the area of the FWP conservation easement. However, during construction, the equipment would be visible from the Giant Springs area and possibly from the Lewis and Clark Interpretive Center. The duration of the construction would be limited and would be completed prior to the 2005 tourist season when visitation to the area is expected to increase due to the bi-centennial celebration of the Lewis & Clark Expedition.

Because of the limited duration of the most noticeable aesthetic impacts, the timing of the impacts, the location of the impacts and the limited nature of the permanent aesthetic changes, the overall impact to aesthetics is minor.

3.3.5.3 New Diversion Alternative

In addition to the impacts outlined in 3.3.5.2, the construction of a new diversion would negatively impact the view in the immediate area of Giant Springs as the part of the spring and the surrounding area would be excavated. The impact to aesthetic would be moderate as the construction in the area the Giant Springs would be highly visible and intrusive in an area with high aesthetic values.

3.3.6 AIR QUALITY

Review of the Air Quality Permit 3238-00 EA indicates the air quality classification of Great Falls is "Unclassifiable or Better than National Standards" for all pollutants. Further review of the of the Air Quality Permit 3238-00 EA indicates that the Montana Refining Company located approximately 1.5 miles southwest of the proposed malt production facility does not show compliance with Montana Ambient Air Quality Standards with regard to SO_2 emissions. Montana Refining Company is not required to show compliance with this standard.

3.3.6.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.6.2 Existing Diversion Alternative

Air quality would be slightly diminished for a short time due to the emissions from equipment used in the construction of the water supply system would be minor. No impacts to air quality are expected as a result of the operation of the water supply system. The impacts to air quality due to the construction and operation of the water supply system would be minor given the limited severity and duration.

3.3.6.3 New Diversion Alternative

The New Diversion Alternative would result in slightly increased emissions over the low emission level associated with the Existing Diversion Alternative due to the additional construction. The equipment used for the additional excavation would generate the increased emissions. As with the existing diversion alternative, the impact to air quality would be minor.

3.3.7 HISTORICAL & ARCHEOLOGICAL SITES

The Hatchery and Giant Springs State Park contain many historic features. These features include rock walls constructed in the early 1920s as part of the original hatchery construction as well as some historic buildings dating back to the early days of the Hatchery. No archeological sites exist on Hatchery grounds.

The proposed pipeline route from the north bank of the river to the malt plant contains both native, undisturbed lands as well as currently or previously cultivated lands.

3.3.7.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.7.2 Existing Diversion Alternative

The State Historic Preservation Office has recommended that a cultural resources inventory be conducted of the previously undisturbed native lands. IMC would employ a qualified archaeologist to conduct a detailed cultural survey and inventory of the proposed pipeline route in previously undisturbed areas. IMC plans to adjust the route if cultural resources were to be found in close proximity to the intended route. The cultural resources survey and inventory would be coordinated with the State Historic Preservation Office. As IMC has provided a plan to mitigate impacts to historical & archeological sites, the impact would be minor.

3.3.7.3 New Diversion Alternative

The impacts with the New Diversion Alternative would be the same as those expected with the Existing Diversion Alternative with the addition of impacts associated with the additional construction. The area in and around the main spring contains historic rock walls. The New

Diversion Alternative would require that the walls be disassembled prior to the excavation and installation of the collection pipes and reassembled to their previous state after construction. This method was used during the installation of the existing diversion. As this additional impact would short term, when considered with the other impacts outlined with regard to the Existing Diversion Alternative the overall impact to historical & archeological sites would be minor.

3.3.8 LOCAL AND STATE TAX BASE AND TAX REVENUE

The Great Falls area has a large residential population and some industrial development. The region is also a very important agricultural area producing primarily small grains, hay and livestock. The 2000 assessed property value for Cascade County is $2,728,247,779. (MT Dept. of Revenue, 2000)

3.3.8.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.8.2 Existing Diversion Alternative

The Air Quality Permit 3238-00 EA reports that the water supply system is expected to cost slightly less than $1 million. This value is very minor in relation to the assessed value of property in Cascade County. As with the malt plant itself, the expected increase in property taxes associated with the water supply system would be relatively small when compared to all property tax revenues in the area.

It is expected that the increased income to malt barley producers could be on the order of $3 million to $6 million.(see section 3.3.9.2) The secondary positive impacts to the local and state tax base and tax revenue due to increased income to malt barley producers while important would be small in relation to the existing revenues and tax base.

The overall direct and secondary impacts to the local and state tax base and to tax revenue would be minor when compared to the current tax base and tax revenue levels.

3.3.8.3 New Diversion Alternative

The New Diversion Alternative represents the almost the same impact on the local and state tax base and tax revenue as the Existing Diversion Alternative with a very slight increase associated with the added revenues associated with the added cost of construction and added value associated with the new diversion structure and associated additional structures. As with the Existing Diversion Alternative, the direct and secondary positive impact to the local and state tax base and tax revenue would be minor.

3.3.9 AGRICULTURAL OR INDUSTRIAL PRODUCTION

According to the Montana Dept. of Agriculture interpretation of Montana Agricultural Statistics Services data, current Malt Barley production in the north central region of Montana was 9.6 million bushels in 2000 and 7.2 million bushels in 2001. (Poppe & Sullivan, 2003) The current malt barley price per 100 pounds is $5.25 in the Great Falls area with feed barley at $3.85 - $4.70. Malt barley prices often greatly exceed the feed barley price and range around $7.00.

Much of the barley grown in region is exported out the state. Review of railroad shipping rates for barley effective September 1, 2002 as reported by the Montana Wheat and Barley Committee

indicates the price of shipping in the area is about $0.50 per bushel or about $1 per 100 pounds. The cost of shipping 16 million bushels is about $8 million.

3.3.9.1 No Action Alternative

The No Action Alternative would not impact this resource.

3.3.9.2 Existing Diversion Alternative

The Existing Diversion Alternative would result in the objective of supplying the malt production facility with a high quality reliable source of water creating a secondary impact on the demand for malt barley in the region. The initial demand of 12 million bushels of malt barely with the long-range demand of 16 million bushels is in excess of the existing production requiring additional production of about 6 million bushels of malt barley. Projecting a premium of $1.00 to $2.00 per hundred pounds or $0.48 to $0.96 per bushels this would translate into additional farm revenues of $2.9 million to $5.8 million over feed barley revenues. The increased demand for malt barley may support higher long-term prices for malt barely as well as cause a shift in production from other crops to malt barley, possibly resulting in improved local prices for other crops as the supply decreases. Malt barley prices would be further bolstered by a reallocation of shipping charges. The purchasers of the malt would pay to ship the malt from the IMC plant to their breweries as opposed to the current situation where barley producers indirectly pay for shipping cost through lower prices received. The situation where the purchaser of the product is paying the shipping charges instead of the producer should result in sustained higher prices for malt barley in the region. A substantial portion of the $8 million shipping cost would be retained by the farmers in the form of higher prices.

The impact to individual farmers could be substantial. To a farmer raising 20,000 bushels of malt barley that would otherwise be sold as feed barley could earn on the order of an additional $10 to $20 thousand in revenues. Farmers currently selling malt barley would also experience increased prices due to increased local demand and an elimination of shipping costs. The overall impact would be very important to individual farmers and would be moderately beneficial in relation to total agricultural production in the area.

3.3.9.3 New Diversion Alternative

The new diversion alternative would have the same moderately beneficial impact on agricultural or industrial production as the existing diversion alternative.

3.3.10 ACCESS TO AND QUALITY OF RECREATIONAL ACTIVITIES

According to the Water Supply Protection Project of Giant Springs Hatchery EA Giant Springs is a popular tourist attraction with visitation ranging from 150,000 to 290,000. Giant Springs State Park is used primarily in the summer for picnics, fishing, and general recreation. Many visitors to the Park also visit the Hatchery. Visitation is expected to increase with the upcoming Lewis and Clark Bicentennial Celebration, particularly given the proximity of the Lewis and Clark Interpretive Center. The Missouri River in the area of Giant Springs is also used by a large number of recreationalists.

3.3.10.1No Action Alternative

The No Action Alternative would not impact this resource.

3.3.10.2Existing Diversion Alternative

During construction access to portions of the hatchery grounds would be limited. The impact would be limited to an area that is not typically visited by the public while touring the hatchery. Access to the area around Giant Springs would not be limited.

The Missouri River in the project area is used for recreational actives. Because the pipeline would be installed under the river using directional boring, no interference with the use of the River is expected. From the north side of the River to the IMC plant, recreational activities may be precluded in some areas during the excavation for and installation of the pipeline. The area and duration of the restricted access would be limited.

The short-term impacts to access to and quality of recreational activities associated with the construction of the water supply system would be minor. No long-term impacts would be expected.

3.3.10.3New Diversion Alternative

In addition to the impacts outlined in 3.3.10.2, the construction of a new diversion would further limit access to certain areas of the Hatchery grounds; in particular access to Giant Springs would be limited during construction. There would be a moderate short-term impact to access to and quality of recreational activities.

3.3.11 QUANTITY AND DISTRIBUTION OF EMPLOYMENT

The Great Falls area typically has many substantial construction projects occurring at any given time. Both local and regional companies contract these construction projects and at times hire temporary, sometime seasonal help to work on the projects. The scope and size of the projects is highly variable. In 2001 there were 32,568 jobs in Cascade County.(Great Falls City-County Growth Policy, 2003)

3.3.11.1No Action Alternative

The No Action Alternative would not impact this resource.

3.3.11.2Existing Diversion Alternative

The construction of the water supply system may cause a short-term increase in employment as temporary local workers may be employed by the contractors. IMC intends to use regional contractors from within the state of Montana for as much of the construction of the water supply system as possible. The cost of mobilization generally prevents contractors as a greater distance from competitively bidding for the contracts except for contracts requiring project specific expertise or equipment. However, the increase in employment associated with the water supply system would be minor in terms of the overall number of jobs in the Great Falls area.

3.3.11.3New Diversion Alternative

The New Diversion Alternative may create some additional employment opportunities than the Existing Diversion Alternative, as the size of the project would be larger. However, as with the Existing diversion alternative the increase in jobs would be minor in terms of the overall number of jobs in the Great Falls area.

3.3.12 DEMANDS FOR GOVERNMENT SERVICES

The City of Great Falls wastewater treatment plant discharges an average of 9.2 million gallons per day (MGD)of treated water to the Missouri River with a current maximum capacity of15 MGD. The treatment plant is designed for an increased capacity through the addition of a fourth sludge train to an existing series of basins. This fourth sludge train with the possible addition of a third digester that is accommodated for in the treatment plant design would increase the plant capacity to 21 MGD. This The sewer system consists of 211 miles of collector and transmission mains.(Great Falls City-County Growth Policy, 2003)

The City of Great Falls currently supplies potable water to approximately 22,000 customers accounting for an average annual volume of about 12,300 to 15,300 acre-feet delivered through approximately 268 miles of water mains.(Great Falls City Engineers Office, pers. Comm., 2003) This usage translates to a average daily usage of 33.7 to 41.9 acre-feet. The maximum peak demand is approximately 62 cubic feet per second with a maximum water treatment plant capacity of approximately 97 cubic feet per second.(Great Falls City-County Growth Policy, 2003) The City holds three water rights, and one water reservation for future use, for their municipal water treatment plant. The existing water rights have a combined total appropriation of 101 cubic feet per second, up to 73,122 acre-feet per year. The reservation has an additional municipal appropriation of 11.5 cubic feet per second up to 6022 acre-feet per year.

3.3.12.1No Action Alternative
The No Action Alternative would not impact this resource.

3.3.12.2Existing Diversion Alternative
The demand for effluent treatment by the City of Great Falls wastewater treatment plant would increase as IMC intends to discharge 80% of the water supplied to the malt processing plant into the City sewer system for treatment and ultimately to be released into the Missouri River. The City of Great Falls has determined that the wastewater treatment plant has sufficient capacity to treat the additional wastewater. This represents about a 20 % increased discharge from the wastewater treatment plant. The wastewater from IMC has a loading of 375 mg/l of bio-chemical oxygen demand (BOD) and 185 mg/l of total suspended solids (TSS). In terms of the present bio-chemical oxygen demand this represents a greater than 20% increase demand on the sewer treatment plant. However, the City's wastewater treatment plant is capable of handling this increased BOD and TSS demand. Additionally the City may require IMC to pre-treat their effluent if the City determines BOD and/or TSS loads must be reduced in order for the City to effectively and economically treat IMC's wastewater.

IMC would be charged for sewer usage and these charges would be used to cover the costs associated with this public utility. IMC would be subject to the established sewer rate structure including additional charges for total suspended solids and bio-chemical oxygen demand. At 1,200 gpm of wastewater with the BOD and TSS concentration outlined previously this would generate an annual billing of approximately $2.8 million for treatment of the malt plant wastewater. This is representative of the maximum volumes of wastewater produced at full production with no pre-treatment on the part of IMC. Reduced volumes and/or pre-treatment would reduce the cost of treatment.

While the City's water right would supply the consumptive portion of water needed for the malt processing plant, the City would not be responsible for delivering that water to IMC. The City has proposed a price to IMC for the cost of raw water and IMC has indicated that the price is acceptable; a formal agreement is yet to be signed. The City has proposed to charge 15% of the price charged to Malmstrom Air Force Base for treated water. The current price charged to Malmstrom is $1.05 per 100 cubic feet. The City determined the price based on many factors

including the fact that the City would have no cost in delivering the water to IMC as is solely financing the cost of the raw water supply system. Additionally the price was based on the City's water rights exceeding the current and foreseeable demand. The City's water reservation being changed must be perfected or developed by 2025. Considering the City's existing rights greatly exceed the current demand by at least a factor of 5 without consideration to the reservation, the City believes that the development of the Water Reservation for industrial purposes is prudent as it would otherwise not be developed prior to the 2025 deadline. At 300 gpm continual usage of the City's water reservation, the annual revenue for water would be approximately $33,000, with very little associated costs.

The potable water and sanitary sewer for the Malt Processing plant would be supplied by the City's municipal systems. The demand for potable water and sanitary sewer would be small as employment at the plant is expected to be about 40 full time employees.

The increased demand for government services would be moderate in relation to the current demand and system. The costs associated with the increased demand for municipal water and wastewater treatment would be offset by use charges. The increased demand would be beneficial as the City's water and sewer systems are utilities selling water and sewer services. The increased demand would represent increased revenues to the City's utilities allowing for continued maintenance and upgrades to the municipal supply and sanitary sewer systems.

3.3.12.3New Diversion Alternative

The New Diversion Alternative represents the same increased demand for government services and moderately beneficial impact as the Existing Diversion Alternative.

3.4 NON-AFFECTED RESOURCES

Several resources would not be impacted by any of the three alternatives. The non-affected resources are summarized .

3.4.1 Unique Endangered Fragile or Limited Environmental Resources

Air Quality Permit 3238-00 EA indicates that two plant species of concern were identified by the Montana Natural Heritage Program. These species, *Entosthodon rubiginosus* and *Funaria americana*, are both bryophytes or mosses that were reported over 50 years ago. Typical habitat for these species would be in and around the Missouri River and the springs located along the south bank in the general project area. All disturbances associated with the water supply project would be away from the likely habitat of these species. For this reason, it is unlikely these plant species would be impacted.

In past water right actions involving the Missouri River concerns have been expressed about Pallid Sturgeon, an endangered species found in the Missouri River well downstream of the project area. Previous concerns have been with regard to high spring flows in the Missouri River necessary for the triggering the spawning migration of the Pallid Sturgeon. As the applications call for no new consumptive water rights and changes in water distribution amounting to less than $1/100^{th}$ of 1 percent of the lowest mean monthly flow in the Missouri, there would be no impact to the Pallid Sturgeon due to flow modification.

Water Supply Protection Project for Giant Springs Hatchery EA evaluated the possible impact to other animal species of concern and endangered animal species in the area and concluded none

would be impacted. FWP review of this previous conclusion with respect to the proposed project reached the same finding. No endangered or threatened species would be impacted.

3.4.2 Demands on Environmental Resources of Water Air and Energy

The construction of the water supply system would put no demands on water, air and energy resources beyond those already addressed.

3.4.3 Social Structures and Mores

The construction of the water supply system would be similar to other construction projects in the Great Falls area and is not expected to impact the social structure or mores in the area.

3.4.4 Cultural Uniqueness and Diversity

While the construction of the water supply system may require contractors from outside the Great Falls area, this possible temporary influx of workers is similar to that already experienced with other construction projects and is not expected to impact the cultural uniqueness and diversity of the area.

3.4.5 Human Health

The construction of the water supply system would occur in compliance with OSHA regulations designed to protect human health. No impacts to human health are expected from the construction of the water supply system. No impacts to human health are expected from the operation of the water supply system.

3.4.6 Industrial and Commercial Activity

The construction of the water supply system would not impact industrial or commercial activity, as the system as currently contemplated would be sufficient to supply only IMC.

3.4.7 Locally Adopted Environmental Plans and Goals

The Missouri River in the area of the project is listed on the 2000 303d list meaning that a TMDL plan will be developed by the Cascade County Conservation District in conjunction with the Department of Environmental Quality and the Environmental Protection Agency. The plan is yet to be developed. The TMDL planning process will account for both point and non-point sources of pollution. Both the existing discharge from the City's wastewater treatment plant and the total plant capacity will be accounted for in the TMDL planning process as an existing point source. Because the IMC wastewater will be treated under the City's existing MPDES permit it does not represent a new effluent that will require individual attention in the TMDL planning process. Review of the probable causes of impairments to Missouri River in the reach between the Sun River and Rainbow dam finds that the wastewater from IMC after treatment by the City would not contribute the probable causes of impairment listed. In fact, the volume added to the City's discharge may serve to dilute effluents such as mercury, metals, PCBs, and selenium that have been listed as probable causes of impairments.

The Cascade County Conservation District is a member of the Missouri River Council, which has broad ranging goals for the Missouri River corridor. The construction of the water supply would not likely be contrary to the future TMDL Plan nor is it likely contrary to the goals of the Missouri River Council. The project is consistent with the Great Falls City-County Growth Policy.

4.0 COMMENTS

4.1 COMMENT PERIOD

The Draft Environmental Assessments was released on July 11, 2003. The document was mailed to several parties as well as being made available electronically via intranet. Comments were accepted through August 11, 2003. 15 comments were received by the deadline with 2 comments being received after the deadline. All substantive comments were considered in developing the Final EA.

4.2 RESPONSE TO COMMENTS

All comments were read, categorized and summarized. Following is a summary of the comments followed by answers to the comments. The answers may simply reference a section in the EA. The answer may indicate that the EA has been revised and list the section number. Finally, in the case of comments that are not substantive the answer addresses the comment without reference to the EA.

4.2.1 **Comment:** The public should be privy to the financial arrangement and other legal agreements between the FWP and IMC, and City of Great Falls and IMC.

Answer: The tentative financial arrangements with the City of Great Falls are now included in Section 3.3.12.2. The financial arrangements between IMC and FWP are discussed in sections 1.5 and 1.6.1 and will be subject to further public comment.

4.2.2 **Comment:** FWP should use revenues generated from the water right lease "to permanently underwrite FWP costs for Giant Springs Park maintenance and improvements."

Answer: FWP's agreement with IMC will specify how and where any compensation is to be used. Mitigation for the hatchery and fisheries will be a priority, based on impacted areas.

4.2.3 **Comment:** "I would like to see: 1) the Hydrologist's assessment formally added to the EA (several questions were raised regarding the potential environmental impacts from drilling under the Missouri River), 2) a mechanism established for State oversight of the drilling process, and 3) adequate liability insurance by the Malt Company to cover the cost of repairing any unforeseen damage."

Answer: 1) DNRC hydrogeologist's assessment of potential effects of directional drilling on Giant Springs has been incorporated into the narrative in section 3.3.3.2. 2) DNRC will work with IMC, FWP and the drilling contractor in establishing a monitoring plan during the drilling phase of construction. 3) IMC and any contractors in their employ will be liable for their actions just as with any construction project.

4.2.4 **Comment:** Items 1.4.3.1 and 3.3.1 appear to be in conflict. The EA states that there will be no impact to the fishery, but then explains that fish production at the hatchery may be reduced by as much as 19% during certain periods.

Answer: The Missouri River fishery is not necessarily directly influenced by fish hatchery production. Section 1.4.3.1 concerns the impact to the fishery in the Missouri River. The impacts to Hatchery production are addressed in Section 3.3.1.2.

4.2.5 **Comment:** If FWP desired a future expansion of the hatchery, would they be able to recover their leased allotment of water from the malting company?

Answer: FWP's portional lease of its water right is for a period of up to 10 years. At the end of that period, and upon mutual agreement between FWP and IMC, the water right may be leased for another 10-year period. FWP controls the ability to renew the lease arrangement, or revert the water right back for fish hatchery purposes. (Please see response to comment 4.2.18 for further details.) FWP has no plans to expand the Hatchery in the next 10 years.

4.2.6 **Comment:** Public interests have and will continue to be protected during the construction and operation of the IMC plant. The EA adequately and comprehensively documents this. The IMC project, as addressed by the EA, adheres to the Administrative Rules of Montana, and will be environmentally sound.

Answer: DNRC believes this Final EA accurately characterizes potential impacts, and is the appropriate level of analysis.

4.2.7 **Comment:** Is there no other water source for IMC other than water provided by Giant Springs?

Answer: Water source alternatives considered by IMC are discussed in section 2.4.2 of the EA. Generally speaking, IMC's only alternative for surface water was from an existing water right(s). The upper Missouri River basin, including the area around Great Falls, is closed to new appropriations of water for industrial/commercial purposes (on a year-around perspective). The company contemplated groundwater, but Giant Springs was chosen because of its quality, quantity and temperature.

4.2.8 **Comment:** Cumulative effects should involve the following points: a) the City of Great Falls has adopted a Missouri River Master Plan, which has not yet been adopted by Cascade County, b) Cascade County has neither a master plan nor zoning ordinances addressing river protection and subdivision along the river corridor, c) Missouri River water through Cascade County continues to become degraded, and CCCD has been ineffective using its 303 program to protect natural river banks which are being replaced by chemically treated lawns and rip-wrap, d) In summary, residential, commercial and industrial development along the Missouri River in Cascade County has been proceeding without any master plan to protect river quality. Given items a-d, what will be the cumulative effect on the Missouri River water by the action proposed within the EA?

Answer: Items a-d generally involve actions or responsibilities of Cascade County, the City of Great Falls, the CCCD (Cascade County Conservation District), and perhaps others. It is beyond the scope of this document to reflect upon the responsibilities of these entities. The impacts to TMDL (303) planning are further discussed in section 3.3.2.2.

4.2.9 **Comment:** Will the opportunity to object to the water right transfer be provided, even though the period to do so expired on July 25, before the completion of the EA? Why is an EIS not required?

Answer: There are two Applications To Change A Water Right involved in this process. They were noticed to the public on June 25, 2003 with an objection deadline of July 25, 2003. In addition to publication in the Great Falls Tribune, notice was sent to individual water right owners and entities in the area. An objection period of 30 days was selected, far beyond the required 15-day period required by law. Although the draft EA comment deadline was August 11, the EA was available for review via the internet, or upon contact with the DNRC or FWP, during the water right objection period. DNRC and FWP properly and legally noticed these processes, and ample opportunity was afforded the water right objection process. Consequently, the objection period for water rights will not be reopened.

Section 2.11 explains why an EIS is not necessary.

4.2.10 **Comment:** The water returned to the river from the malting plant will be of lesser quality than that of the high quality Giant Springs water. What will be the effect of returning lower quality water to the river? Given combined effects of treated effluent from the malting plant and changes in fish hatchery effluent strength, a cumulative effects analysis should be included in the EA to determine the overall effect on Missouri River water.

Answer: Sections 3.3.2.2 and 3.4.7 further address water quality The water quality of the Missouri is not expected to decline from the change in 1200 gpm no longer be discharged from the Hatchery to the same 1200 gpm being discharged from the wastewater treatment plant. The quality of water discharged from the Hatchery is not expected to decline as the pounds of fish raised and the associated waste will decline proportionally to the decrease in discharge.

4.2.11 **Comment:** How can the proposed IMC project be regarded as non-consumptive water use? Such consumptive use threatens Giant Springs.

Answer: IMC's proposed water use has both non-consumptive and consumptive components. 80% of it's water use will be non-consumptive, as water will return to the Missouri River via the Great Falls sewage treatment plant. This component of the water use is covered by a change of FWP's non-consumptive water right.

20% of IMC's water use will be consumptive, and is covered by a change of the City of Great Falls' water reservation. In determining whether or not to issue a water right authorization, DNRC evaluates whether statutory criteria have been met. These criteria can be found in Appendix B.

4.2.12 **Comment:** Agri-Technology has plans to build an ethanol plant one mile to the southeast of Giant Springs. Why has no thought been given to locating the malting facility next to the malting operation? By locating the facilities next to each other, the ethanol plant could accept the malt operation's wastewater.

Answer: This comment is beyond the scope of the EA. The location of the IMC plant has already been determined and is not subject to the jurisdiction of the DNRC or FWP.

4.2.13 **Comment:** Estimates for how many people will be employed at the plant have continued to rise. Other malting facilities of this size typically employ 8-15 people. The EA states that IMC could employ as many as 40 people. If any of the cost associated with developing the IMC site and water system is to be borne by the public, the public has a right to know how much is spent, and how many jobs will be created. Has IMC made a firm written commitment to increase plant capacity by the amount associated with the second phase of construction?

Answer: According to IMC, the expected employment level of this plant, at a production level of 12 million bushels per year, will be approximately 35-40 employees (30-35 for production, and up to 5 employees in the laboratory). At full capacity, this plant is expected to operate at a level of 16 million bushels. IMC notes that the plant is expected to operate at

5000 metric tons per employee, and "will be one of the most efficient in the world."

4.2.14 **Comment:** The economic value of this project is over estimated. From discussions with other malting companies, the project will not result in any increased demand for barley. According to malting experts, Montana does not produce the barley variety (6-row barley) to be utilized by the IMC plant. How will the IMC facility increase demand for Montana barley?

Answer: The information in the draft EA was compiled from discussions with the State Department of Agriculture and IMC. It is extremely difficult to estimate economic impacts and barley production, as producers will be making individual decisions based on market conditions. The dollar values in the EA are intended to represent the magnitude of the impacts.

According to IMC, 75% of their product will be derived from 2-row barley. In addition, some areas in eastern Montana are being developed for 6-row barley. It is within IMC's interest to build upon efforts to expand 6-row barley in Montana.

4.2.15 **Comment:** How much federal, state, and local money will be spent to pay for IMC's site development and related infrastructure?

Answer: IMC is currently in the early stages of planning, design and construction of this project, and it is unknown how much federal, state or local funding will be utilized. As with many private business-related ventures, IMC may pursue any funding available to it.

4.2.16 **Comment:** Source Giant Springs Inc. (SGSI) was denied the opportunity to develop a completely new diversion structure. In light of the earlier decision, why was the option to allow IMC to develop a new diversion structure even considered?

Answer: The MEPA requires that reasonable alternatives be explored. The New Diversion Alternative represents a reasonable alternative that achieves the goals of the project.

4.2.17 **Comment:** Commercial sale of Giant Springs water involved a very public review process during which Source Giant Springs Inc. (SGSI) made a presentation to the FWP Commission. Even though the company owned the historic water system in place since the early 1900's, the DFWP voted to approve SGSI's use of the springs. Will a similar process be followed for the proposed IMC project? If so, when?

Answer: IMC has, and continues to receive public scrutiny throughout it's process of locating a malt plant in Great Falls. Multiple government agencies have been involved in permitting activities, which received public notice, including environmental assessments. Any agreement between IMC and FWP regarding financial arrangements, lease of water right, easements, use of facilities, etc., will have to be approved by the FWP Commission.

4.2.18 **Comment:** Will the FWP be able to recover their leased water allotment from IMC if more water is needed for the hatchery?

Answer: The FWP is currently in the process of framing an agreement characterizing the financial arrangements and water right lease between IMC, the City of Great Falls and itself. The arrangement is expected to contain conditions for reversion of water rights back to FWP, as well as IMC water right termination and default clauses. No expansion plans for the hatchery exist for the ten-year lease period.

4.2.19 **Comment:** The DNRC should develop guidelines for future non-consumptive and consumptive use of water emanating from the Giant Springs Artesian Structure, including groundwater and water flowing directly into the Missouri River channel.

Answer: State statute has provisions for limitations on new appropriations from both surface and groundwater sources. New surface water appropriations have already been legislatively closed as described in section 2.4.4 of the EA. The DNRC relies on local ground water users to initiate the groundwater closure through a petition process. These petitions are typically associated water shortages, which is not the case with the Madison Aquifer in the Great Falls area.

4.2.20 **Comment:** What permits are required for the City of Great Falls to use Giant Springs as a community water source?

Answer: The City of Great Falls may apply for a new water right, or change of existing water right, for municipal use from Giant Springs. These applications would be subject to the statutory criteria found in sections 85-2-311 and 85-2-402(2) respectively. During the application process establishing the Water Reservations Above Fort Peck Dam the City Great Falls explore the possibility of obtaining a water reservation for future use from Giant Springs. The Reservation Application stated, "This source (Giant Springs) was not considered feasible in the Master Plan because of the high cost of treating the water for hardness."

4.2.21 **Comment:** It would be beneficial to hold a public hearing on this project.

Answer: State agencies' obligation to provide for public involvement is best summarized in *A Guide To The Montana Environmental Policy Act, 2002*, which states, "For an EA, the agency's responsibility to provide public access to the process is largely discretionary. Although an agency has considerable discretion, MEPA Model Rule VI notes that an EA is a public document and may be inspected upon request. The use of a public comment period for an EA is also discretionary, again depending on the level of public interest and the seriousness and complexity of the potential impacts of the decision." DNRC and DFWP determined that the issuance of a draft EA, allowing for written comment, was the appropriate level of public involvement. In addition to the EA comment period, the agencies' decision processes allowed for further public involvement. The water right change applications have completed a public notice and objection process with notice published in the Great Falls Tribune. The granting of the easement by DNRC must receive approval of the Board of Land Commissioners. Also, the actions of DFWP (water right lease, easements, financial agreements, etc.) must be approved by the Fish and Game Commission. All of these processes provide for public involvement.

4.2.22 **Comment:** "I would like to know what is the total maximum water allotment that has been granted to the City of Great Falls? I would also like to know what is the total maximum water allotment from Giant Springs for Fish, Wildlife and Parks?"

Answer: The City of Great Falls holds three water rights, and one water reservation for future use. The existing water rights have a combined total appropriation of 101 cubic feet per second, up to 73,122 acre-feet per year. The reservation provides for an additional municipal appropriation of 11.5 cubic feet per second, up to 6022 acre-feet per year. Section 3.3.12 further discusses the City's rights. Section 3.3.2 discusses FWP's water rights. The FWP holds two water rights from Giant Springs, for fish hatchery purposes, with a combined appropriation of 16,000 gallons per minute (35.7 cfs), up to 25,804 acre-feet per year. FWP has an additional water right for 325 gpm up to 57.5 acre-feet per year for irrigation of Hatchery and Park grounds. Both FWP and the City of Great Fall's water rights are subject to a final adjudication by the Montana Water Court.

4.2.23 **Comment:** "We desire that local area union contractors be subcontracted to construct this plant."

Answer: Section 3.3.11.2 discusses the impacts to employment. IMC has indicated that construction contracts will be awarded on a competitive bid basis and that all contractors are welcome to bid.

4.2.24 **Comment:** "This plant will improve the tax base and marketing opportunities for farmers."

Answer: Sections 3.3.8.2 and 3.3.9.2 conclude the same.

4.2.25 **Comment:** "Will this project result in greater use of nitrogen based fertilizers and thus greater water pollution from the Fairfield bench? Will the sediment load be altered or increased."

Answer: Because the upper Missouri River basin including the Fairfield Bench is closed to new appropriations as outlined in section 2.4.4, the amount of irrigated acres is not expected to increase due to the IMC plant. Changes in production from other small grains to malt barley is not expected to increase pollution due to nitrogen fertilizer as malt barley production demands careful fertilizer management to maintain low protein levels.

4.2.26 **Comment:** IMC's construction of a new pump house and waterlines could interfere with SGSI's (Source Giant Springs, Inc.) infrastructure.

Answer: Since the release of the Draft EA IMC in conjunction with FWP has decided to modify plans on Hatchery grounds to eliminate the need for an additional pump house and to re-route the pipeline to avoid existing pipelines. Section 2.5.2 outlines the modified plan and Appendix C contains a revised site plan. These modifications should eliminate any chance of interfering with SGSI's infrastructure.

4.2.27 **Comment:** What will IMC's BOD be, and can they pre-treat the water on site, prior to conveyance to the city sewage treatment plant?

Answer: Section 3.3.12.2 now discusses the BOD load. The City may require pre-treatment if necessary for efficient and economic operation of the wastewater treatment plant.

4.2.28 **Comment:** "We would like to review your project file to review what information and studies you have relied on in reaching the conclusions contained in the Draft EA and then be given opportunity to comment thereon.

Answer: All information contained in the water right and EA files are public documents, and can be reviewed upon request. However, the EA comment deadline was August 11, 2003 and was not extended.

4.2.29 **Comment:** The discharge from Giant Springs seems to have varied over time. In 1973 the USGS determined the flow at 298 cfs, and this may have decreased over the years. While drought may be related to the

decrease, no one knows for sure what the future will bring. If IMC is supplied water from Giant Springs, will this set a precedent such that other industrial water users may follow?

Answer: The issuance of a water right authorization to IMC will have no bearing on future water right actions on Giant Springs. If another water user files an application, the DNRC will judge the proposal per Montana water law, not on a previous action. In addition, FWP will be in the same position it has been with IMC. That is, any similar actions will require approval from FWP and it's commission. Actions taken by either agency include public participation as well.

4.2.30 **Comment:** There has been a great deal of public involvement in IMC's selection of Great Falls for a new malt plant. Some of the entities and individuals involved include Governor Martz, state, federal and local government, business development organizations, agricultural organizations, congressional and state elected representatives, and the public. Planning of this facility included diverse interests, and the public was well represented.

Answer: Numerous public agencies, congressional and state elected representatives, business/agricultural organizations, and public interests were involved in various phases of this project.

REFERENCES

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